

IN THE CLAIMS

1. (Withdrawn) An independent display system for a computer aided detection (CAD) system that analyzes medical images, the independent display system comprising:

an input mechanism to receive an identifier for a medical image;

a touch screen to display the medical image including any marked regions of interest;

a plurality of icons to interact with the touch screen, such that the independent display system does not require a keyboard or cursor controller.

2. (Withdrawn) The independent display system of claim 1, wherein the input mechanism is a barcode scanner.

3. (Withdrawn) The independent display system of claim 1, wherein the input mechanism is a camera.

4. (Withdrawn) The independent display system of claim 1, wherein the input mechanism is a microphone and a voice recognition system.

5. (Withdrawn) The independent display system of claim 1, wherein the input mechanism is selected from among the following: a keyboard, a limited keyer, a mouse, a trackball, a pen.

6. (Withdrawn) The independent display system of claim 1, wherein the independent display system is modality independent.

7. (Withdrawn) The independent display system of claim 1, wherein the screen of the independent display system is designed to be placed in proximity to a film viewer, and is operable with existing film viewers.

8. (Currently Amended) An independent display system for a computer aided detection (CAD) system that analyzes medical images, the independent display system comprising:

an autoloading logic to enable a technician to individually associate a plurality of CAD-processed digitized medical images with a corresponding plurality of lightbox buttons, the lightbox buttons being spatially arranged within a lightbox icon to reflect a physical arrangement of a plurality of lightboxes on which a plurality of film-based medical images from which said digitized medical images have been derived are placed;

an input mechanism to receive an image identifier for each of said film-based medical images during said individual associations;

a touch screen to display the digitized medical images including any marked regions of interest;

a plurality of icons to interact with the touch screen, such that the independent display system does not require a keyboard or cursor controller;

one of the plurality of icons including a said lightbox icon, wherein one of the lightbox buttons ~~may be~~ is selected by a radiologist to bring up the digitized medical image corresponding to a currently examined one of the film-based medical images.

9. (Currently Amended) The independent display system of claim 8, wherein the digitized medical images remains associated with the lightbox buttons on the lightbox icon layout indicator, such that previous images are recalled by selecting the

appropriate lightbox button.

10. (Currently Amended) The independent display system of claim 8, wherein the layout indicator lightbox icon comprises:

~~an icon of~~ illustrates the independent display system positioned in proximity to ~~one or more icons of~~ said light boxes as represented by said lightbox buttons, reflecting an actual layout in a current location.

11. (Currently Amended) The independent display system of claim 8, further comprising:

a layout logic to permit the user to alter the layout indicator lightbox icon to correspond to an actual layout of the lightboxes in a current location during a set-up of the system.

12. (Currently Amended) The independent display system of claim 11, further comprising:

a number of preset potential layouts among which the user can choose during said set-up of the system.

13. (Original) The independent display system of claim 12, further comprising; a programming logic permitting the user to create a customized layout indicator.

14. (Currently Amended) The independent display system of claim 8, wherein

the radiologist user selects the lightbox being evaluated on the touch screen by touching the appropriate light box button, to call up said corresponding digitized medical ~~when an image is called up.~~

Claims 15-37 (Cancelled)

Claims 38-43 (Cancelled)

44. (Withdrawn) The independent display system of claim 37, wherein the independent display system is modality independent.

45. (Withdrawn) The independent display system of claim 37, wherein the screen of the independent display system is designed to be placed in proximity to a film viewer, and is operable with existing film viewers.

Claim 46. (Cancelled)

47. (Withdrawn) The independent display system of claim 37, further comprising:

a printer icon, permitting the user to print the medical images including any marked regions of interest.

48. (Withdrawn) The independent display system of claim 47, wherein the printer icon is present when the printer is enabled and connected to the system.

49. (Withdrawn) The independent display system of claim 47, wherein the printer icon indicates whether the printer is available for use, offline, or out of paper.

50. (Withdrawn) The independent display system of claim 37, further comprising:

display adjustment icon, permitting the user to adjust a quality of the medical images displayed.

51. (Withdrawn) The independent display system of claim 50, wherein the display adjustment icon includes a plot of the display adjustment, indicating the adjustment made.

52. (Withdrawn) The independent display system of claim 51, wherein the display adjustment icon is a brightness and contrast icon, permitting the user to adjust the brightness and the contrast of the image.

53. (Withdrawn) The independent display system of claim 52, wherein the brightness and contrast icon further includes a reset area, such that when the reset area is pressed by the user, the brightness and the contrast are reset to their original values.

54. (Withdrawn) The independent display system of claim 51, wherein the display adjustment icon is a gamma icon permitting the user to increase and decrease the gamma of the image.

55. (Withdrawn) The independent display system of claim 54, wherein the gamma icon further includes a reset area, such that when the reset area is pressed by the user, the gamma value is reset to the original value.

Serial. No.: 09/992,046

6

Docket No.: 005809.P003

56. (Withdrawn) The independent display system of claim 37, further comprising a delay mechanism to delay displaying the image.

57. (Withdrawn) The independent display system of claim 56, wherein the delay mechanism may be disabled.

58. (Withdrawn) The independent display system of claim 37, further comprising an auto load mechanism to permit review of a preprogrammed series of images.

59. (Withdrawn) The independent display system of claim 58, wherein one of the icons is a series movement icon to show a selected image in the series.

60. (Withdrawn) The independent display system of claim 37, further comprising a historical review to show historical images of the same modality and the same patient as the current image.

61. (Withdrawn) The independent display system of claim 60, wherein a set of the plurality of icons are icons permitting navigation among the historical images.

62. (Withdrawn) The independent display system of claim 61, wherein the set of icons include a current image icon, a baseline image icon, and navigation icons to navigate a plurality images between the current image and the baseline image.

63. (Withdrawn) The independent display system of claim 60, further comprising a loading logic to identify a patient and modality based on the identifier of
Serial. No.: 09/992,046

the medical image, and to load the appropriate historical images in response to a user request.

64. (Withdrawn) The independent display system of claim 37, further comprising a loading unit to identify a patient associated with the medical image and to load relevant patient information.

65. (Withdrawn) The independent display system of claim 64, wherein the patient information is patient data and patient history data.

66. (Withdrawn) The independent display system of claim 64, further comprising:
the touch screen to display the patient information.

67. (Withdrawn) The independent display system of claim 64, further comprising a disabling logic to disable the loading unit from loading the patient information.

68. (Withdrawn) The independent display system of claim 37, further comprising a toggle to display patient information.

69. (Withdrawn) A computer aided detection (CAD) system that analyzes medical images comprising:
an image acquisition system to acquire a medical image and associate an image ID therewith;

an analysis system to identify regions of interest (ROIs) in the medical image, generate a annotated road map identifying one or more of said ROIs thereon, and associate said image ID with said annotated road map;

a display mechanism to display the medical images; and

an independent display external to the analysis system, the independent display comprising:

an input mechanism to receive the image ID of the medical image being displayed on the display mechanism and identify the annotated road map associated with the image ID; and

a screen to display the identified annotated road map, wherein said screen comprises a touchscreen including a plurality of icons to facilitate interaction with the annotated road map.

70. (Withdrawn) The CAD system of claim 69, wherein the displayed medical image is a film-based, and wherein one of the plurality of icons is a layout indicator indicating a position of a lightbox upon which the displayed medical image corresponding to the currently displayed annotation map is located.

71. (Withdrawn) The CAD system of claim 70, wherein the layout indicator comprises:

an icon of the independent display system positioned in proximity to one or more icons of lightboxes in a manner that reflects an actual layout of said independent display system and said lightboxes.

72. (Withdrawn) The CAD system of claim 71, further comprising:
layout logic to permit the user to alter the layout indicator to correspond to said actual layout.

73. (Withdrawn) The CAD system of claim 69, wherein one of the plurality of icons is a printer icon, permitting the user to print the medical images including any marked regions of interest.

74. (Withdrawn) The CAD system of claim 73, wherein the printer icon indicates whether the printer is available for use, offline, or out of paper.

75. (Withdrawn) The CAD system of claim 69, wherein one of the plurality of icons is a display adjustment icon, permitting the user to adjust a quality of the medical images displayed.

76. (Withdrawn) The CAD system of claim 69, further comprising a delay mechanism to delay displaying the image.

77. (Withdrawn) The CAD system of claim 69, wherein the delay mechanism may be disabled.

78. (Withdrawn) The CAD system of claim 69, further comprising an auto load mechanism to permit review of a preprogrammed series of images.

79. (Withdrawn) The CAD system of claim 69, wherein one of the icons is a Next/Done icon to show a next image in the series.

80. (Withdrawn) The CAD system of claim 69, further comprising a historical review to show historical images of the same modality and the same patient as the current image.

81. (Withdrawn) The CAD system of claim 80, wherein a set of the plurality of icons are icons permitting navigation among the historical images.

82. (Withdrawn) The CAD system of claim 81, wherein the set of icons include a current image icon, a baseline image icon, and navigation icons to navigate a plurality of images between the current image and the baseline image.

83. (Withdrawn) The CAD system of claim 69, further comprising a loading logic to identify a patient and modality based on the identifier of the medical image, and to load the appropriate historical images in response to a user request.

84. (Withdrawn) The CAD system of claim 69, further comprising a loading unit to identify a patient associated with the medical image and to load relevant patient information.

85. (Withdrawn) The CAD system of claim 84, wherein the patient information is patient data and patient history data.

86. (Withdrawn) The CAD system of claim 69, wherein one of the icons is a toggle to show patient information.

87. (Withdrawn) The CAD system of claim 69, further comprising:
a frame sensor to monitor a motion of the display mechanism of a motorized viewer in which patient image data is divided into frames, where adjacent frames may contain image data from different patients, the frame sensor to pass a frame data to the input mechanism of the independent display.

Serial. No.: 09/992,046

11

Docket No.: 005809.P003

88. (Withdrawn) A method of displaying medical images from a computer aided diagnostic (CAD) system comprising:

- identifying a medical image based on an image identification;
- identifying a lightbox for the image and highlighting the identified lightbox on a lightbox icon;
- displaying the image to the user.

89. (Withdrawn) A method of setting up a system to enable displaying digitized medical images processed by a computer aided diagnostic (CAD) system, the method comprising:

- identifying a film medical image based on an image identification;
- identifying a location of a lightbox on which the film image has been placed, and selecting a corresponding lightbox button on a lightbox icon; and
- displaying the digitized medical image to the user, in response to the selection of the corresponding lightbox button on the lightbox icon.

90. (Withdrawn) The method of claim 89, further comprising:

- displaying a printer icon indicating whether the printer is connected or not.

91. (Withdrawn) The method of claim 88, further comprising:

- receiving an image adjustment signal from the user, and adjusting the image quality of the medical image.

92. (Withdrawn) The method of claim 91, wherein the image adjustment signal is a brightness and/or contrast adjustment.

93. (Withdrawn) The method of claim 91, wherein the image adjustment signal is a gamma adjustment.

94. (Withdrawn) The method of claim 91, further comprising:
receiving a reset signal, in response to the user pressing a single selection, and
resetting the image quality to the original image quality in response to the reset signal.

95. (Withdrawn) The method of claim 88, further comprising:
receiving an advance sequence signal indicating that the user has completed
review of the current medical image; and
displaying a subsequent medical image in a preprogrammed series in response
to the advance sequence signal.

96. (Withdrawn) The method of claim 88, further comprising:
receiving a request for a historical image;
identifying a patient and modality displayed in the current medical image; and
retrieving images of the same patient and the same modality, if available.

97. (Withdrawn) The method of claim 96, further comprising:
enabling navigation among the historical images, including displaying a current
image icon, a baseline image icon, and navigation icons to navigate a plurality images
between the current image and the baseline image.

98. (Withdrawn) The method of claim 88, further comprising:
identifying a patient based on the image identification;
loading relevant patient information; and
indicating to the user that the patient information is available.

99. (Withdrawn) The method of claim 88, wherein the method is modality independent.

100. (Withdrawn) The method of claim 89, wherein the image remains associated with the lightbox on the layout indicator, such that previous images are recalled by selecting the appropriate lightbox.

101. (Withdrawn) The method of claim 88, further comprising:
displaying a plot of a current image quality indicating the adjustment made.

102. (Withdrawn) The method of claim 88, further comprising:
waiting a preset delay prior to displaying the image.

103. (Withdrawn) The method of claim 102, wherein the delay may be disabled.

104. (Withdrawn) The method of claim 88, further comprising a loading unit to identify a patient associated with the medical image and to load relevant patient information.

105. (Withdrawn) The method of claim 104, wherein the patient information is patient data and patient history data.

106. (Withdrawn) The method of claim 104, further comprising a disabling logic to disable the loading unit from loading the patient information.

107. (Withdrawn) The method of claim 104, wherein one of the icons is a toggle to display patient information.

108. (Withdrawn) An independent display system to simplify concurrent review of an film image and a computer aided detection (CAD) processed image, the system comprising:

- an autoload logic to enable a user to sequence a plurality of CAD processed images to correspond to an actual set of currently set up film images;
- a lightbox button indicating a location of the film image being viewed;
- the lightbox button usable to call up the CAD processed image corresponding to the film image at the location indicated by the lightbox button.

109. (Withdrawn) The independent display system of claim 108, wherein the lightbox button display mirrors a configuration of light boxes set up in a location.

110. (Withdrawn) The independent display system of claim 108, wherein the location is a station along a motorized lightbox.

111. (Withdrawn) The independent display system of claim 108, wherein the autoload logic enables a user to indicate a case ID for a film image and select a corresponding lightbox icon, thereby associating the actual location of the film image with the corresponding lightbox icon.

112. (Withdrawn) The independent display system of claim 108, wherein the display system is in one of two phases, a first set-up phase in which the film images are associated with the lightbox buttons, or a second review phase in which a user calls up

the CAD processed images and reviews the film images in conjunction with the CAD processed images.

113. (Withdrawn) The independent display system of claim 112, wherein the CAD processed images are only displayed during the second, review phase.

114. (Withdrawn) A method of simplifying concurrent review of film images and computer aided detection (CAD) processed image, the method comprising:

in a first, set-up phase:

placing a film image on a lightbox location;

receiving a case ID for the film image;

receiving a lightbox button selection for the film image, the lightbox selection indicating a location of the film image within a plurality of lightbox locations;

associating the CAD processed image corresponding to the case ID with the lightbox button;

in a second, review phase:

receiving a lightbox button selection; and

displaying the CAD processed image corresponding to the lightbox button selection.

115. (Withdrawn) The method of claim 114, further comprising during the set-up phase:

pre-fetching the CAD processed images from a central database to a local system.

116. (Withdrawn) The method of claim 114, wherein the lightbox button display mirrors a configuration of light boxes set up in a location.

117. (Withdrawn) The method of claim 114, wherein the location is a station along a motorized lightbox.